



April 2024 Climate Summary

Tornado north of Lincoln, Nebraska. Photo Courtesy of Gannon Rush

Regional Breakdown

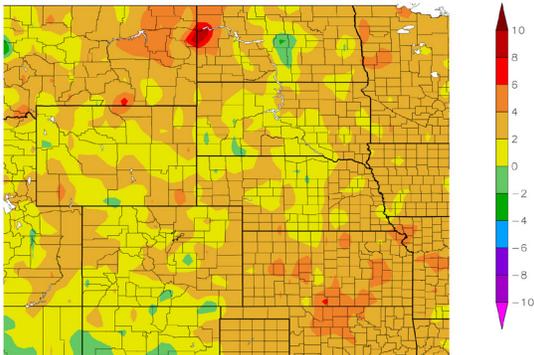
Severe weather significantly ramped up this month, with one of the more impactful outbreaks in recent years striking the southern parts of the region at the end of the month. Heavy precipitation and downpours with the multiple rounds of storms led to tremendous recorded totals.

After several weeks of scattered severe storms, conditions rapidly became favorable towards the end of the month. Several weak tornadoes and reports of 3-inch (7.62 cm) hail struck western Kansas and eastern Colorado on the 25th, setting the stage for what was to come.

The next day, eastern Nebraska was ravaged by an onslaught of strong tornadoes. Multiple EF-3s struck the state for the first time since 2014, wreaking havoc along their paths. Lincoln narrowly avoided a direct hit, with a large tornado packing 158 mph (254 km/h) winds touching down just on the edge of town. It would track across Interstate 80, before dissipating just outside of Waverly. The same storm would spawn a mile-wide (1.6 km) behemoth that would cause devastating damage to the towns of Elkhorn, Bennington, and Blair on the outskirts of Omaha with 165 mph (266 km/h) winds. Homes were leveled and cars were tossed like ragdolls during its 30-mile (48 km) reign of terror. Downtown Omaha also escaped a near disaster, with another EF-3 touching down at Eppley Airfield.

Temperature and Precipitation Overview

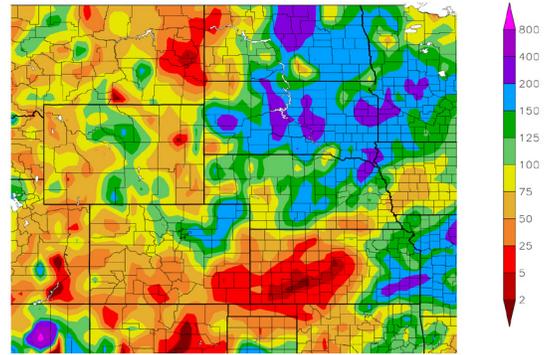
Departure from Normal Temperature (F)
4/1/2024 - 4/30/2024



Generated 5/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
4/1/2024 - 4/30/2024



Generated 5/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Departure from 1991-2020 normal temperature (left) and percent of normal precipitation (right) for April 2024 in the High Plains region. Maps produced by the High Plains Regional Climate Center and are available at: <http://hprcc.unl.edu/maps/current>.

Precipitation

The northern High Plains and eastern Kansas received normal to above normal precipitation this month, while others were not as fortunate. Parts of western Kansas are on their second month in a row of well below to near zero amounts.

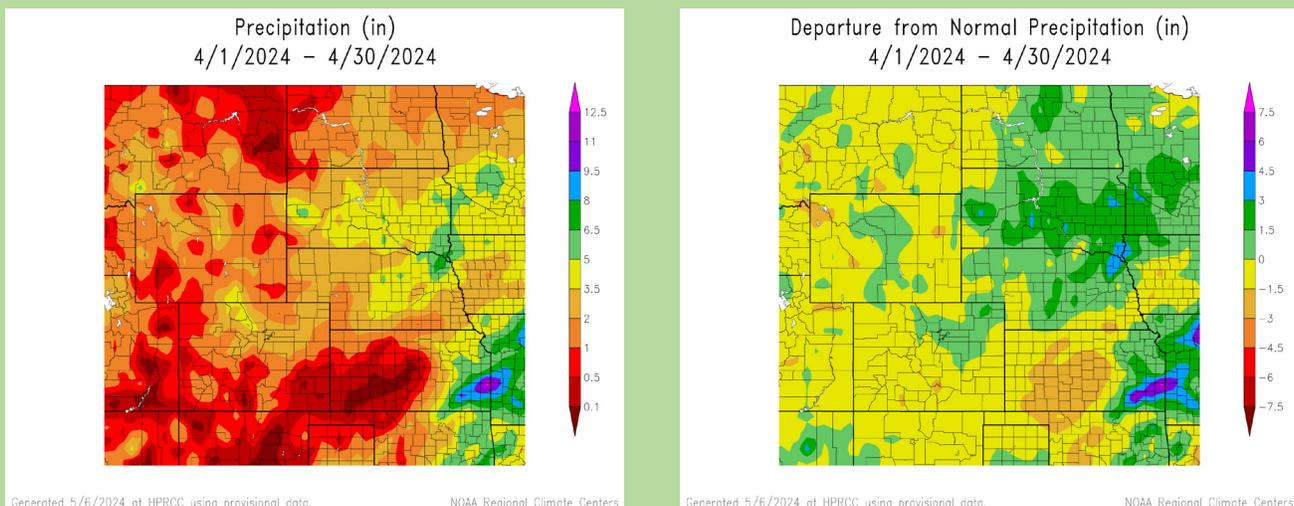
Areas around in southeastern Kansas had buckets of rain dumped on them at the end of the month. Fort Scott and the surrounding areas recorded over 10 inches (25.4 cm) from the 26th to the 28th. Much of this fell on the 28th when locations such as Humboldt observed 8.10 inches (20.57 cm).

To the north in South Dakota, several locations were in the top 10 wettest. The town of Martin recorded their wettest April on record, with 4.23 inches (10.74 cm) this month. Rapid City in the west ranked 5th and Pierre in the central part of the state ranked 7th.

On the flip side, western Kansas has once again entered an extended period of missing out on any meaningful precipitation. Dodge City tied with 1909 for their driest April, while also ranking 3rd for driest March-April. Nearby places such as Bucklin, Cimarron, and Offerle ranked driest for the two months, with only those locations receiving around 0.25 inches of precipitation (0.64 cm).

With the melt-off of snowpack in the mountains imminent or underway, the basins in Colorado and Wyoming are in decent shape. Snow Water Equivalent (SWE) was near normal, which should benefit rivers and streams. Streamflow improved in Nebraska thanks to the heavy precipitation, however, central Kansas remains low.

Regional Precipitation



Above: Total precipitation in inches (left) and departure from normal precipitation in inches (right) for April 2024. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: <http://hprcc.unl.edu/maps/current>.

Temperatures

Warmer temperatures returned this month, with the region experiencing slightly above-normal temperatures. Outside of an anomaly, the southern half of the region likely observed their last frost this month. Average temperatures this month were 2 to 4 degrees F (1.1 to 2.2 degrees C) above normal this month.

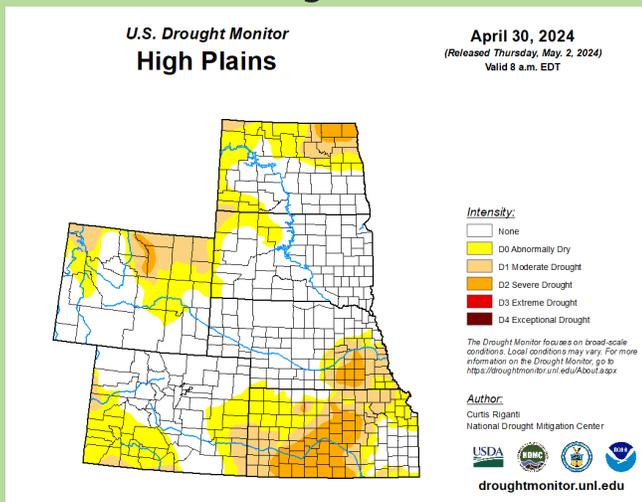
While temperatures were slightly above normal this month, there were no significant records broken. This does, however, continue a trend that stretches back to the beginning of the year with large portions of the region 4 degrees F (2.2 degrees C) above normal. Many locations rank in the top 10 for the warmest January through April, with several locations in the region ranking in the top 5. Sioux Falls, South Dakota and Grand Forks, North Dakota recorded their 4th warmest start to the year, thanks in part to a strong El Nino this winter. Scattered throughout the region ranking as 3rd warmest include Fargo, North Dakota, Grand Junction, Colorado, and Laramie, Wyoming.

Drought Conditions

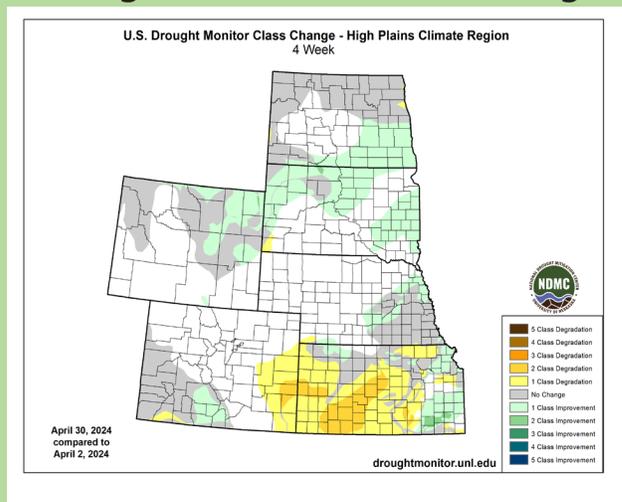
Heavy precipitation this month improved drought conditions for some, while others were not as fortunate. Up to 2 classes of change occurred on both ends of the spectrum, with an overall reduction of 6 percent of D0 to D4 (abnormally dry to exceptional drought conditions) in the High Plains.

After steadily climbing out of a significant drought, Kansas took a big step backward this month. At the beginning of April, less than 2 percent of the state was experiencing D2 (severe drought). Over the month, it rapidly rose to over 27 percent. Much of the western part of the state slipped back into drought conditions, after a short period of being close to drought free.

U.S. Drought Monitor



Drought Monitor 1-Month Change



The U.S. Drought Monitor is produced as a joint effort of the U.S. Department of Agriculture (USDA), National Drought Mitigation Center, U.S. Department of Commerce, and the National Oceanic and Atmospheric Administration (NOAA). For current Drought Monitor information, please see: <http://droughtmonitor.unl.edu/>.

April 2024 Climate Summary

Climate Outlooks

According to the Climate Prediction Center, El Niño conditions are likely to continue but transition towards ENSO-neutral in mid to late Spring. An El Niño advisory and La Niña watch is currently in effect. For more information, visit https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

The National Weather Service's long-range flood outlook indicates elevated chances of Minor and Moderate Flooding in the eastern parts of Kansas through the end of July. According to the National Interagency Fire Center (NIFC), fire potential will be limited through August.

The seasonal temperature and precipitation outlooks presented below combine the effects of long-term trends, soil moisture, and when applicable, the El Niño Southern Oscillation cycle (ENSO). To learn more about these outlooks, please visit <http://www.cpc.ncep.noaa.gov>.

Temperature

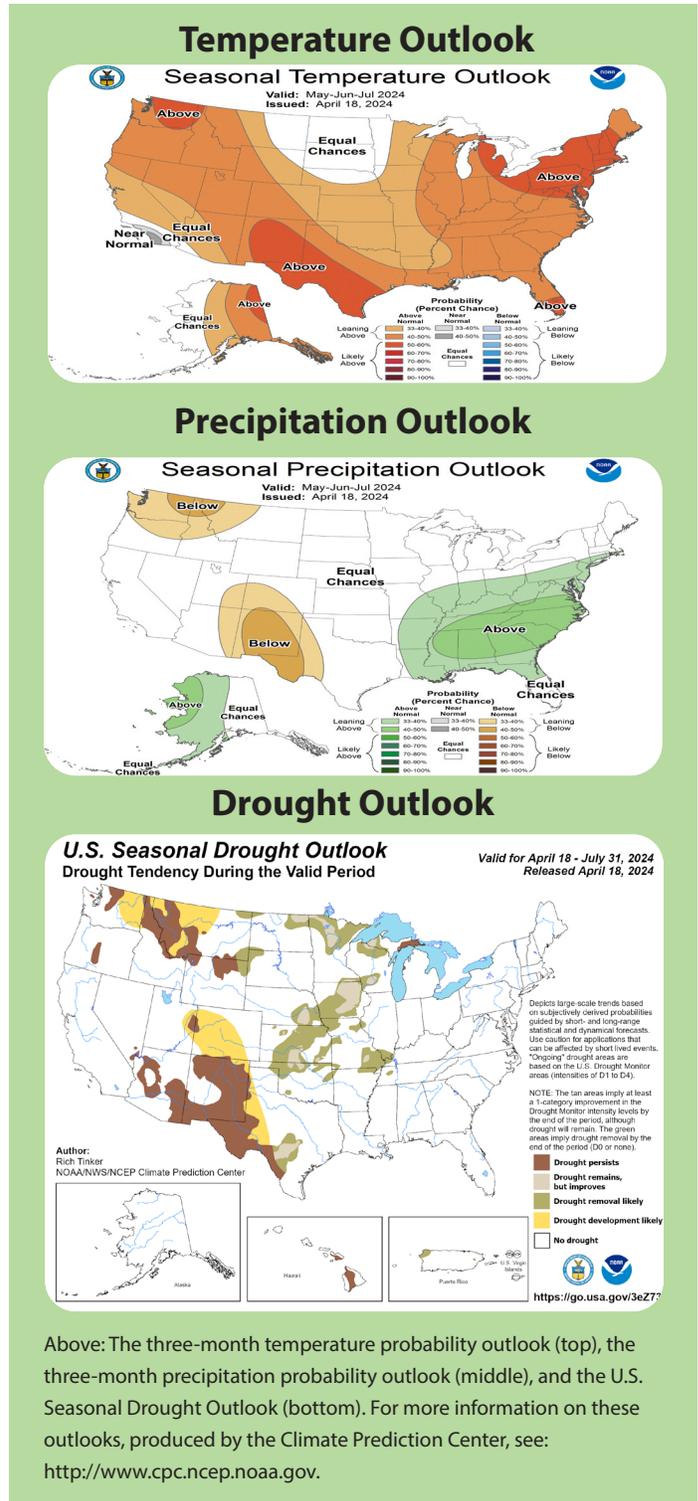
The three-month temperature outlook shows an increased chance of above-normal temperatures across the much of the United States. Above-normal temperatures are slightly favored across Colorado, Kansas, Nebraska, and Wyoming.

Precipitation

The outlook for the next three months indicates below-normal precipitation across the Pacific Northwest and the Southwest, while above-normal precipitation is favored for the southeastern United States. Slight chances of below normal precipitation are possible in western Colorado.

Drought

The U.S Seasonal Drought Outlook released on April 30th indicates that improvements to drought conditions will occur across the region except for Colorado.



Above: The three-month temperature probability outlook (top), the three-month precipitation probability outlook (middle), and the U.S. Seasonal Drought Outlook (bottom). For more information on these outlooks, produced by the Climate Prediction Center, see: <http://www.cpc.ncep.noaa.gov>.

Station Summaries: By the Numbers

Colorado	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Akron Washington County Airport	64.2	34.2	49.2	2.0	83	04/15	22	04/08	3.08	1.65	215
Alamosa San Luis Airport	63.5	23.9	43.7	1.1	75	04/23	10	04/08	0.09	-0.48	16
Colorado Springs Municipal Airport	63.8	36.6	50.2	2.7	78	04/30	28	04/11	1.52	0.07	105
Denver International Airport	63.9	37.1	50.5	2.7	80	04/14	24	04/08	3.28	1.60	195
Grand Junction Walker Field Airport	70.7	42.2	56.5	4.6	86	04/23	25	04/07	0.63	-0.35	64
Pueblo Memorial Airport	70.2	37.5	53.9	2.6	86	04/22	25	04/08	1.07	-0.50	68

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	71.6	44.8	58.2	5.1	91	04/14	32	04/05	3.61	1.08	143
Dodge City Regional Airport	74.6	41.8	58.2	3.9	94	04/14	29	04/08	0.02	-1.97	1
Goodland Renner Field	68.5	36.7	52.6	3.3	88	04/15	25	04/09	0.88	-0.81	52
Topeka Municipal Airport	72.8	46.8	59.8	4.3	89	04/14	28	04/05	4.45	0.64	117
Wichita Mid-Continent Airport	73.3	47.5	60.4	3.9	93	04/14	34	04/04	1.48	-1.62	48

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	62.2	32.8	47.5	1.7	85	04/15	15	04/20	2.00	0.04	102
Grand Island Airport	66.9	39.6	53.2	2.2	87	04/13	25	04/20	4.11	1.59	163
Lincoln Municipal Airport	69.2	40.1	54.7	2.7	89	04/14	24	04/05	3.42	0.73	127
Norfolk Karl Stefan Airfield	64.4	39.2	51.8	2.9	87	04/13	27	04/05	4.69	1.96	172
North Platte Regional Airport	65.8	33.8	49.8	1.6	89	04/13	21	04/21	2.28	-0.01	100
Omaha Eppley Airport	67.5	42.1	54.8	2.2	88	04/14	26	04/04	2.25	-0.92	71
Valentine Miller Field	61.3	34.8	48.0	0.8	91	04/13	20	04/20	3.03	0.55	122

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	57.8	33.2	45.5	2.3	81	04/13	21	04/03	2.06	0.72	154
Fargo International Airport	59.7	36.9	48.3	5.3	81	04/13	22	04/04	2.70	1.16	175
Grand Forks International Airport	56.5	31.1	43.8	3.1	78	04/25	16	04/01	2.02	0.81	167
Theodore Roosevelt Airport	58.1	31.0	44.6	3.0	80	04/25	20	04/19	1.04	-0.33	76
Williston International Airport	59.8	33.4	46.6	4.2	79	04/25	18	04/20	0.83	-0.22	79

All data are preliminary and subject to change. + indicates multiple dates, latest date listed. * indicates some missing data for the period. ** indicates value is under evaluation. Data are retrieved through the Applied Climate Information System (ACIS) and are available online through the CLIMOD system. For more information please contact us: <http://www.hprcc.unl.edu/contact.php>.

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South Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Aberdeen Regional Airport	60.6	34.9	47.7	3.2	89	04/13	23	04/05	3.38	1.47	177
Huron Regional Airport	61.3	35.8	48.6	2.9	91	04/13	18	04/04	4.17	1.65	165
Pierre Regional Airport	60.1	35.2	47.7	1.8	88	04/13	20	04/02	3.76	1.83	195
Rapid City Regional Airport	61.3	33.2	47.3	3.4	86	04/13	19	04/20	4.59	2.51	221
Sioux Falls Joe Foss Field Airport	62.7	39.5	51.1	3.9	88	04/13	27	04/21	5.20	2.20	173

Wyoming	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Casper Natrona County International AP	58.5	28.7	43.6	1.3	75	04/14	18	04/21	1.22	-0.19	87
Cheyenne Municipal Airport	57.5	32.8	45.1	2.3	74	04/14	20	04/21	1.00	-0.79	56
Lander Hunt Field Airport	59.6	33.1	46.4	3.2	75	04/14	23	04/18	1.20	-0.87	58
Laramie Regional Airport	56.0	28.3	42.2	4.3	71	04/14	16	04/21	1.56	0.52	150
Rawlins Municipal Airport	57.1	28.1	42.6	2.2	71	04/12	14	04/18	1.37	0.11	109
Sheridan County Airport	61.8	32.0	46.9	3.7	81	04/14	20	04/21	1.28	-0.59	68

April 2024 Highlights

Monthly Rankings

Temperature in degrees Fahrenheit, Precipitation in inches

Temperature	Temperature / Ranking	Record / Year	Period of Record
Concordia, Kansas	58.2 / 10th Warmest	61.0 / 1896	1885-2024
Precipitation	Precipitation / Ranking	Record / Year	Period of Record
Rapid City, South Dakota	4.59 / 5th Wettest	5.16 / 1967	1942-2024
Akron, Colorado	3.08 / 6th Wettest	3.94 / 1983	1937-2024
Pierre, South Dakota	3.76 / 7th Wettest	6.38 / 1986	1893-2024
Laramie, Wyoming	1.56 / 10th Wettest	3.71 / 1983	1948-2024
Dodge City, Kansas	0.02 / Driest (tied with 1909)		1874-2024
Salina, Kansas	0.51 / 6th Driest	0.21 / 1937	1948-2024

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About the High Plains Regional Climate Center

The High Plains Regional Climate Center (HPRCC) is one of six NOAA Regional Climate Centers (RCCs) that has been providing timely climate data and information to the public for cost effective decision-making since 1987. The HPRCC primarily serves the six-state region of Colorado, Kansas, Nebraska, North Dakota, South Dakota, and Wyoming, but has also served people from all across the country and even throughout the world. HPRCC operates under a three-tiered structure of climate services and works closely with other organizations on the local, regional, and national levels. HPRCC staff engage with a wide range of stakeholders including K-20 education, the public, media, private industry, research, and state/tribal/federal entities, among others.

Much of the data and products found throughout this publication were built on the Applied Climate Information System (ACIS) framework. ACIS was designed to manage the complex flow of information from climate data collectors to the end users of climate data information. The main purpose of ACIS is to alleviate the burden of climate information management for people who use climate information to make management decisions.

HPRCC is involved in the ongoing development and management of ACIS. In the spring of 2014, the RCCs released a new website for ACIS. This new and improved website not only contains descriptions of ACIS and the sources of data found within, but also features real-world examples of how RCCs and external groups are using ACIS for their particular climate data needs. In addition to these examples, there is extensive documentation and tutorials on how ACIS can be used and accessed by external clients using Web Services. For more information see: <http://rcc-acis.org>.



Additional Summary Information for the High Plains

Missouri River Basin Quarterly Climate Impacts and Outlook

The screenshot shows the cover page of a report titled "Missouri River Basin Quarterly Climate Impacts and Outlook" for September-October 2014. It features a map of the basin, a table of contents, and several sections of text and graphics, including "Highlights for November and October 2014", "Regional - Impacts for September - November 2014", "Regional - Outlook for January - March 2015", and "MO River Basin Partners".

For more information:
<https://www.drought.gov/drought/dews/missouri-river-basin/reports-assessments-and-outlooks>

Midwest and Great Plains Monthly Climate and Drought Webinar

The screenshot shows a video player for a webinar titled "20141120 Monthly Climate and Drought Webinar". The main content is a map titled "Forecast Precipitation Amounts (7 day)" showing precipitation forecasts for the Midwest and Great Plains regions. The map uses a color scale from blue (low) to red (high). A play button is visible in the center of the map.

To sign up for future webinars:
<https://www.drought.gov/drought/calendar/webinars>

For an archive:
www.hprcc.unl.edu/webinars.php

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